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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,934	04/12/2004	Osamu Shimomura	2018-876	2148

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EXAMINER

AURORA, REENA

ART UNIT PAPER NUMBER

2862

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/821,934

Applicant(s)

SHIMOMURA ET AL.

Examiner

Reena Aurora

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☒ Claim(s) 1,7-12, 14 - 18 is/are rejected.
- 7) ☒ Claim(s) 2 - 6 and 19 - 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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DETAILED ACTION

This communication is in response to amendment received on 01/04/06.

Applicant has added new claims 13 – 20.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 7, 9 – 12, 14 and 16 - 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Muraji et al. (6,867,582).

As to claims 1, 11 and 12, Muraji et al. (hereinafter Muraji) discloses a position sensor including a magnetic flux generating means (114, fig. 4) including a magnet for generating magnetic fluxes; a magnetism sensing element (113) responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generating means (114) and the magnetism sensing element (113) from the magnetic fluxes passing therethrough; and a magnetic flux reducing means (330, fig. 27(c)) for passing therethrough a part of the magnetic fluxes generated by the magnet (114) thereby to reduce the magnetic fluxes passing through the magnetism sensing element (113) only when the relative turning angle between the magnetic flux

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generating means and the magnetism sensing element is within a predetermined range of turning angles, wherein at least one of the magnetic flux reducing means and the magnetic flux generating means (114) is rotatable relative to the other of the magnetic flux reducing means (330) and the magnetic flux generating means and the magnetic flux generating means.

As to claim 14, Muraji discloses a position sensor including a magnetic flux generating means (114, fig. 4) including a magnet for generating magnetic fluxes; a magnetism sensing element (113) responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generating means (114) and the magnetism sensing element (113) from the magnetic fluxes passing therethrough; and a magnetic flux reducing means (330, fig. 27(c)) for passing therethrough a part of the magnetic fluxes generated by the magnet (114) thereby to reduce the magnetic fluxes passing through the magnetism sensing element (113) only when the relative turning angle between the magnetic flux generating means and the magnetism sensing element is within a predetermined range of turning angles, wherein the magnetism sensing element (113) is positioned between two generally semicolumnar cores (111, 112a) made of magnetic material; and the magnetic flux reducing means includes a magnetic shortcut (330) provided between the cores and nearer to the magnetic force generating means than to the magnetism sensing element, the magnetic shortcut being narrower than a radial thickness of the sensing element.

As to claim 18, Muraji discloses a position sensor including a magnetic flux generator (114, fig. 4) including a magnet for generating magnetic fluxes; a magnetism

sensing element (113) responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generator (114) and the magnetism sensing element (113) from the magnetic fluxes passing therethrough; and a magnetic flux reducer (330, fig. 27(c)) for passing therethrough a part of the magnetic fluxes generated by the magnet (114) thereby to reduce the magnetic fluxes passing through the magnetism sensing element (113) only when the relative turning angle between the magnetic flux generator and the magnetism sensing element is within a predetermined range of turning angles, wherein at least one of the magnetic flux reducer and the magnetic flux generator (114) is rotatable relative to the other of the magnetic flux reducer (330) and the magnetic flux generator.

As to claim 7, Muraji discloses the magnetism sensing element (113) is positioned between two generally semicolumnar cores (111, 112a) made of magnetic material; and the magnetic flux reducing means includes a magnetic shortcut (330) provided between the cores and nearer to the magnetic force generating means than to the magnetism sensing element, the magnetic shortcut being narrower than a radial thickness of the sensing element.

As to claims 9 and 16, Muraji discloses that the magnet (114) is divided into two generally semi-cylindrical magnet parts and magnetized in a radial direction; and the magnetism sensing element (113) is disposed between the magnet parts (114) so that the magnetic fluxes pass from one of the magnet parts to the other of the magnet parts through the magnetism sensing element.

As to claims 10 and 17, Muraji discloses the cores (111, 112a) having respective protrusions extending from flat surfaces to provide the shortcut, the flat faces of the cores facing each other; and the protrusions are provided on circumferential ends of the cores thereby to narrow a gap between the cores at the circumferential ends (Note fig. 4 and 27(c)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muraji et al. (6,867,582) in view of Makino et al. (6,693,424).

As to claims 8 and 15, Muraji fails to disclose that the magnetic flux generating means includes two generally semi-cylindrical yokes made of magnetic material and sandwiching the magnet between respective circumferential ends; and the yokes have an inside shape of an ellipse. Makino et al. (hereinafter Makino) discloses a magnetic rotation angle sensor wherein the magnetic flux generating means (4a, 4b, fig. 2) includes two generally semi-cylindrical yokes (1a, 1b) made of magnetic material and sandwiching the magnet between respective circumferential ends; and the yokes have an inside shape of an ellipse (col. 3, lines 30 - 41). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the

device of Muraji in view of Makino to provide the yokes with an inside shape of an ellipse such that magnetic field distribution is gradually changed in proportion to the rotor angular position.

Allowable Subject Matter

Claims 2 – 6 and 19 - 20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 13 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: As to claim 13, the prior art fails to show magnetic flux reducing means for passing a part of the magnetic fluxes generated by the magnet to reduce the magnetic fluxes passing through the magnetism sensing element only when the relative turning angle between the magnetic flux generating means and the magnetism sensing element is within a predetermined range of turning angles and the magnetic flux reducing means is an external magnetic member. These features taken together with the other limitations of the claim renders the claims allowable over prior art.

Response to Arguments

Applicant's arguments with respect to claims 1 - 20 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 571-272-2263. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, E. Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Reena Aurora